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ABSTRACT

For the second year of Project Adventure, an Outward Bound-type physical education program based at Hamilton-Wenham Regional School north of Boston, a battery of 6 tests was administered to the entire sophomore class (123 males and 108 females) before and after the program. Second year results indicated significant, positive changes in responsibility, achievement, physical self, self-concept, willingness to try new things and take risks, and student attitudes concerning the school and each other. Despite changes in staff and students, a wearing-off of newness, and a continuation of first-year limitations (lack of control group, non-testing of absentees, staff member as evaluator), a number of tests showed consistent change in both years. For example, improvement in physical tests was generally consistent for both years; females showed gains in positive identity, achievement motivation, and activities involvement. Self-ratings on participation in class discussions were affected both years; females the first year and males the second year listed themselves as significantly more active in discussion by the end of the year. Included in this report are seven tables of statistical data, discussions of the data, evaluations by participants and parents, and discussions of other performance measures and the student volunteer tutoring program. (AN)

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PROJECT ADVENTURE - YEAR II

Annual Program Evaluation

for 1972-73

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U.S. DEPARTMENT OF HEALTH, EDUCATION & WELFARE
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Table of Contents

Introduction 1

Part I. Quantitative Evaluation of the Physical Education Program 2

Background 2

Research Design 3

Population 3

Testing Instruments 3

Methodology 4

Overall Considerations Regarding This Study 4

Results 5

Results by Category 5

Part II. Two Year Comparison of Data 12

Other Second Year Evaluation Findings 14

A. Parents' View 14

B. Volunteer Program 16

Other Performance Measures 17

Part III. Discussion 19

List of Tables

Table I.	School Climate Survey	6
Table II.	Sex Differences in Physical Tests	7
Table III.	Student Self-Description Form	9
Table IV.	Significant Changes in Self-Concept	10
Table V.	Results from Student Questionnaire	11
Table VI.	Consistently Significant Changes In All Tests for Years I and II	13
Table VII.	Results From Parent Questionnaire - Years I and II	15
Table VIII.	School Systems Affiliated With the Project	18

Project Adventure

Annual Program Evaluation for 1972-73

INTRODUCTION

This evaluation report covers the second year activities of Project Adventure, an ESEA Title III Project. The Project, based at the Regional High School in Hamilton, Massachusetts, has used many of the techniques of Outward Bound while developing action-oriented curriculum in academic disciplines. Thus, students have been involved in physically demanding activities in the outdoors such as rock climbing and rowing, as well as personally demanding activities such as organizing townspeople to work on recycling and taking responsibility for planning and teaching a class in a tutoring program. The Project also trained high school teachers to develop and implement experiential curriculum units and worked with several social agencies.

In its first year, the Project concentrated on a single high school; and in the second year, 5 area schools and 2 social agencies became affiliated members.

The overall goals of the Project are to actively involve students in challenging situations with an element of personal and/or physical risk which can be reasonably overcome and, thus, lead to enhanced self-concept and pride. Rappelling off a cliff, conversing with a stranger from another ethnic group, or writing a poem are examples of risk activities for high school students.

A second goal of the Project is to develop an awareness of group processes and skills in working with groups within a supportive atmosphere. Students in Project activities are grouped to do physical kinds of problem-solving, as well as to explore an urban area to gather information and formulate hypotheses about it.

Another goal of the Project has been to develop initiative and enthusiasm among students and combat passivity. For teachers, the Project has had as its goal the development of an awareness of the variety of teaching and learning styles and experience in dealing with them.

In attaining these goals, a wide variety of methods have been used. These have ranged from a physical education curriculum to teacher training workshops, to wilderness

camping experiences, to action seminars and urban and town explorations.

There are several ways to approach this second year evaluation. One is to look at the second year alone and examine the changes and reports from the particular students involved in this second year program. Another is to compare the findings from both years and see what things stayed the same and why, and what things were different and why. A third approach is to look not only at the statistical data, but the reports and developments in the total Project.

This report will use all of these approaches. It will include "hard data" from the statistical analyses of the pre-post scores of students in the physical education program, in the first and second years, as well as "soft data" from questionnaires and interviews of students, faculty and parents involved in other Project activities both years.

Most of the data was obtained from the students, parents and faculty at Hamilton-Wenham where the program originated. The test results from 2 years in the same system can thus be compared, and the effect of the programs and curriculum in their original form can be observed.

PART I

QUANTITATIVE EVALUATION OF THE PHYSICAL EDUCATION PROGRAM

Background

As in the first year, the second year physical education program involved the entire tenth grade. The previous year's freshmen, thus, took the 3 hour a week course.

Educational goals for this course included improved balance, coordination and endurance, as well as improved functioning in groups, willingness to try new and often intimidating things, and an active involvement. Evaluation focused on the affective and emotional dynamics of the course, as well as the physical dimensions.

There were several structural differences in the 2 years. First, the course was taught almost entirely by the regular physical education teachers, rather than the Project staff. The staff answered questions, handled some of the high-risk

activities, dropped in occasionally and acted more as consultants in the second year. Second, a new group of students were taking the course. They had been freshmen the previous year, and had heard about the outdoor activities. Thus, the newness of the course was less than before, but at the same time "Project Adventure gym" had become an integral part of sophomore year at Hamilton-Wenham. In some ways, the program became a "rite of passage." A third change in the program was the fact that the staff was working with other school systems and, therefore, spent less time at Hamilton-Wenham.

Research Design

The quantitative evaluation closely followed the format used in the first year. Six tests were administered to all the sophomores before and after participating in the physical education course. One test, the student description form filled out by teachers, was discarded as too cumbersome and inexact, while the student questionnaire was revised to measure some of the more specific Project goals.

Dr. Ellsworth Fersch was again retained as a consultant in research design and interpretation of data. Richard Gula, a doctoral candidate at Harvard, and Pamela Smith of the University's computer center were both extremely helpful in the data processing and programming work.

Population

The evaluation involved all participants in the tenth grade physical education course and included a battery of 6 tests. The subjects were 231 tenth grade students (108 females and 123 males) at Hamilton-Wenham Regional High School. They represented an average population of white, small-town/suburban students from slightly higher than average socio-economic backgrounds.

Testing Instruments

The 6 tests administered were:

1. The Tennessee Self-Concept Scale which consists of 100 items designed to measure self-concept in these dimensions:

    a. physical self
    b. moral self
    c. total positivity
    d. positive identity

e. positive behavior
f. self-criticism
g. family self

It also provides a score for consistency in self-concept between the dimensions called total conflict.

2. School Climate Survey, a test based on David C. McClelland's Classroom Climate Survey. It measures students' attitudes toward the school in the areas of power, achievement, affiliation and interest. The latter dimension was our own addition.

4. A Questionnaire designed to measure the kinds and amount of students' leisure time activities, attitudes toward the gym classes and related values.

5. The American Association of Health, Physical Education, and Recreation Test of Physical Fitness and a 12 minute running test adapted from aerobic exercises.

6. The Rotter Scale of Internal vs. External Control of Reinforcement, which measures the degree of perceived external control.

Methodology

The 6 tests were given to the sophomore class before and after participating in the physical education program in September 1972 and June 1973.

Overall Considerations Regarding This Study

The limitations mentioned in the first year report (lack of control group, non-testing of absentees, evaluator as staff member) remain, but in its second year, the study exhibits several strengths. First, using the same evaluation design makes it possible to compare the data from two different sophomore classes. Second, the instruments used in the first year are now more familiar and, thus, processing, tabulating and interpretation have been streamlined. Third, results from the years tests and experience with the data made it possible to revise, eliminate and develop more useful measures.

Results

The results for this report, analyzed by computer using DATA-TEXT, will be presented according to the main hypotheses in the study. Comparisons and trends emerging from the results of both years will be analyzed.

1. School Climate
2. Physical Change
3. General Self-Concept
4. Personal Attitudes
5. Annual Differences
6. Other Programs

Results by Category

1. School Climate. The results displayed in Table I show a number of significant changes in attitude toward the school among the second year participants. A comparison of pre and post scores (using matched T-Tests) on the School Climate Survey reveals that boys saw significant increases in the areas of togetherness (i.e., cooperation and friendliness) and morale (i.e., orderliness and respect) over the year. Boys also displayed a significant increase in personal interest (involvement in the school). Girls, by contrast, saw significantly more general concern on the part of students for the school involvement of others rather than themselves.

   Both groups showed significant gains in affiliation (or warmth and support from teachers and students). Scores for both groups also rose significantly in the areas of responsibility and achievement, indicating that students perceived themselves as being more involved in making decisions and setting goals, within a school atmosphere that stressed constant improvement.

2. Physical Change. There was significant improvement on most scores on the 7 physical tests that were administered to sophomores before and after they had participated in the physical education program. Males improved significantly in 6 areas. Females showed significant improvement in 4 tests, and significant loss on 2 -- the flexed arm hang and 50 yard dash. There was no significant change for either group on the 12 minute run.

   The results on the physical tests for year II are displayed on Table II.

Table I

School Climate Survey

Pre-Post Comparison
(Matched T-Tests by Sex)

		$\bar{X}$ Diff.	SD	P
Togetherness	(Male)	.450	1.516	.011
	(Female)	.099	1.437	NS
Morale	(Male)	.425	1.641	.025
	(Female)	.195	1.444	NS
Responsibility	(Male)	.387	1.677	.044
	(Female)	.346	1.307	.021
Achievement	(Male)	.637	2.309	.017
	(Female)	.481	2.079	.042
Personal Interest	(Male)	.387	1.383	.015
	(Female)	-.012	1.591	NS
General Concern	(Male)	.312	1.729	NS
	(Female)	.494	1.786	.016
School Involvement	(Male)	.700	2.363	.011
	(Female)	.481	2.465	NS

Table II

Sex Differences in Physical Tests

AAHPER Test of Physical Fitness		Mean Scores Pre $\bar{X}$	Post $\bar{X}$	$\bar{X}$ Diff.	T-Test SD	P
# Sit-Ups Per Minute	(Male)	37.7	40.2	1.88	4.55	>.001
	(Female)	32.3	32.9	0.82	6.95	NS
# Pull-Ups or Flexed Arm Hang	(Male)	6.3	7.6	1.30	1.79	>.001
	(Female)	40.7	38.2	-2.42 sec.	1.90	NS
Shuttle Run	(Male) (30 ft.)	105.9 sec.	100.9 sec.	-3.91	4.67	>.001
	(Female) (40 ft.)	135.7 sec.	130.9 sec.	-3.63	9.27	.005
300 Yard Run	(Male	46.9	42.0	-4.73 sec.	3.14	>.001
	(Female)	54.7	50.7	-4.35 sec.	4.72	>.001
50 Yard Dash	(Male)	7.2	6.9	-2.92 sec.	3.94	>.001
	(Female)	7.8	7.9	1.72 sec.	4.78	.010
12 Minute Run (# of Laps)	(Male)	6.3	6.4	.009	1.12	NS
	(Female)	4.9	5.0	.071	0.60	NS
Standing Broad Jump	(Male)	5.9	6.4	4.13	7.43	>.001
	(Female)	5.1	5.4	2.23	5.38	.005

3. Self-Concept

The results displayed on Tables III and IV indicate changes in students' self-concept. Males on the student self-description form showed the greatest change in their attitude toward classroom activities. They saw themselves as significantly more active in discussion and more perceptive as they reported increases in critical attitude and depth of understanding.

For females, change in self-concept was reflected on scores in the Tennessee Self-Concept Scale. Significant change in positive identity, physical self-concept and social self-concept were found. At the same time, there was a decrease in the true-false ratio (the tendency to respond to all questions, either positively or negatively).

Females also exhibited a significant decrease in net conflict. At the end of the year, their responses were less conflictful, indicating more consistency and integration in self-perceptions.

4. Student Questionnaire. Scores on the questionnaire that had been designed to measure some of the more specific goals of the Project showed positive change as indicated on Table V. Females were involved in more activities at the end of the year than at the beginning. On a 5-point continuum they also reported themselves more "willing to take chances." Both males and females reported a highly significant increase in their willingness to "try new things" on a similar scale.

Table III

Student Self-Description Form

		$\bar{X}$ Diff.	T-Test SD	P
Participation in Discussion	(Male)	.32	1.05	.008
	(Female)	.15	0.84	NS
Critical Attitude	(Male)	.24	0.88	.020
	(Female)	.11	0.81	NS
Depth of Understanding	(Male)	.17	0.66	.027
	(Female)	.11	0.69	NS

Table IV

Significant Changes in Self-Concept

Tennessee Self-Concept Scale*	T-Tests By Sex					
	Males			Females		
	$\bar{X}$	SD	P	$\bar{X}$	SD	P
True-False Ratio	-0.86	15.90	NS	-3.87	12.84	.010
Net Conflict	-0.23	12.88	NS	-3.22	10.36	.008
Positive Identity	-0.77	10.50	NS	2.05	8.60	.039
Physical Self	0.10	9.67	NS	2.37	7.87	.010
Social Self	-0.46	9.83	NS	2.33	9.47	.033

* Scores range from 0 to 100.

Table V

Results from Student Questionnaire

Variables	Matched T-Tests					
	Males			Females		
	$\bar{X}$ Diff.	SD	P	$\bar{X}$	SD	P
Willingness to Try New Things	0.305	1.123	.017	0.313	0.875	.003
Willingness to Take a Chance	-0.037	1.064	NS	0.363	1.196	.009
Total Number of Activities Listed	0.337	2.208	NS	1.671	3.585	.001

PART II

TWO-YEAR COMPARISON OF DATA

Despite the changes in staff, students and a wearing-off of newness, a number of tests have showed consistent change both years. In each year, the sophomores were tested on measures before and after participating in the classes.

As illustrated in Table VI, improvement in the physical tests was generally consistent for both classes. Both years females showed significant gains in scores of "Positive Identity" on the Tennessee Self-Concept Scale. They also showed increases in Achievement Motivation and listed a significantly greater number of activities after taking the course.

Self-ratings on participation in discussion also seem to have been affected both years, Females the first year and males the second year listed themselves as significantly more talkative in class by the end of the year.

During the year, a random sampling of students were asked to write about their view of the course from an evaluative standpoint. The following quotes illustrate the variety and flavor of opinions.

> Project Adventure teaches us a lot about ourselves. We learn that we can overcome fears and difficulties if we really try. You don't feel pressured because there is no rigid class schedule. You simply do your best and are judged on not your performance, but your attitude. By the end of the first unit I see a lot of people's attitudes changing for the better.
>
> It makes you aware of things you can do which you may not have known about.
>
> It may let you know some of your fears and may make you overcome them.
>
> It makes you think; like if you are given a problem and have to solve it.
>
> It makes you more responsible because you are responsible for others to make sure they don't get hurt.

Table VI

Consistently Significant Changes In All Tests for Years I and II

AAHPER Test of Physical Fitness	Year I $\bar{X}$ Diff.	Year I SD	Year I P	Year II $\bar{X}$ Diff.	Year II SD	Year II P
Sit-Ups*	4.56	5.06	>.001	1.33	5.78	.006
300 Yard*	-5.33 sec.	10.26	>.001	-4.61 sec.	3.78	>.001
Standing Broad*	3.84	6.83	>.001	3.15	6.81	>.001
50 Yard Run*	-1.241 sec.	5.969	.017	-0.899 sec.	5.106	.041
Pull-Ups (Males)	1.439	1.47	.001	1.30	1.79	>.001
Flex Arm Hang (Females)	0.38 sec.	1.55	NS	-0.24 sec.	1.90	NS
Tennessee Self-Concept Scale						
Positive Identity (Females)	2.48	9.65	.029	2.05	8.60	.039
School Climate Survey						
Achievement Motivation (Females)	0.54	2.24	.040	.481	2.079	.042
General Concern (Females)	-0.76	1.86	>.001	0.49	1.79	.016
Student Questionnaire						
Total # Activities (Females)	2.88	3.32	>.001	1.67	3.59	>.001

* Class as a whole.

You must participate to get anything out of it.

The good thing about it is that no one really makes you do the things.

Some of the things I see no use for, but the others could help.

It helps to build up your confidence in yourself and in your friends.

If you're scared to death of heights, it's going to be very hard for you and it's going to take a lot out of you physically and mentally.

Project Adventure sounds interesting just by its name. Like an Adventure out of doors. This Project Adventure series has got me and I bet others to be more helpful to people. I have learned to give my ideas without feeling foolish in front of a group. I also like this because it gets you outside and not inside the gym. I used to be a grumpy person, but this year I have become more friendly and I think the outdoors and the being with a group of people helping and doing things with them really helped me be more sociable.

Other Second Year Evaluation Findings

A. Parents' Views

In both years a questionnaire was mailed to parents of sophomores who had participated in the year-long gym class, as well as the spring biology trips to Acadia, Maine, or Cape Cod. Table VII compares the findings from both years.

While a smaller percentage of parents responded in the second year (38% as compared to 46%), it appears that their attitudes toward the Project were even more favorable than first-year parents. The following quotes illustrate the variety of responses and give a flavor of some typical observations from parents.

We believe he has a better understanding of teamwork.

This positive change in attitude (self-confidence) has resulted in definite scholarship improvement.

Table VII

Results From Parent Questionnaire

Years I and II

Effect of Project on Child	Year I # Respondents	Year I Percent	Year II # Respondents	Year II Percent
Positive	83	80	70	90
Negative	3	3	1	1
No Effect	8	8	4	5
Don't Know	4	4	3	4
No Answer	5	5	0	0
	103	100	78	100

Field trips -- plus; physical education -- no effect.

It took a great deal of courage for her and we admire the effort.

My son loses interest if not challenged. Project Adventure ... helped his attitude and interest toward school and life in general.

Excellent! Although the effect on our daughter may be minimal, we have watched our nephew grow from a shy introvert into someone just bursting with self-confidence.

We survived fine before it came to the school. It's starting a trend -- back packs, long hair, head bands, lumberjack clothes and the like. Do we really need all this in a community such as this?

From a new resident: Project Adventure has given her probably the most exciting, happy school year so far.

He also expressed emphatically how each one helped the other and no one laughed or made fun of anyone's inability or fears. This, to me, was a very important comment.

B. The Volunteer Program

A thorough-going evaluation of the volunteer program was done in the second year. However, similar data from the first year is not available as it was started in the middle of the first year and no written evaluation was performed. In one sense, the growth of the program is significant.

In the first year, the driving was done by volunteer mothers, the scheduling done by a secretary, recruiting done by a staff member, and students made arrangements with teachers themselves.

In the second year, a part-time staff person was hired to be responsible for schedules, transportation, teacher contacts and working with the tutors. Over 130 students tutored at least once a week for a 12 week term. Others tutored several times a week, some for more than one term, and one

group of students took a course in Educational Psychology and tutored for credit.

Comments, such as the following from parents, students and teachers, give some indication of the value of the program.

> Parent: The rapport between Project Adventure tutors and my younger children is excellent.
>
> Teacher: I feel that the students in my reading class are receiving a better education because of Irene. They get the individual help they need.
>
> Tutor: You find yourself in a way learning how you used to be and seeing them (the youngsters) and wanting to make them more than you really are now. You find yourself wanting to show them that we really can be more than we are.
>
> Teacher: I have seen a tremendous improvement (in the program) from last year to this year.
>
> Tutor: I work with a teacher who has really given me a lot of responsibility which really makes me feel good. And he treats me as sort of an equal ... The teachers talk to you like another teacher.
>
> Parent: ... the tutorial program established a refreshing bond between the youngsters and the tutors, and gave the tutor a sense of responsibility and accomplishment.

Other Performance Measures

1. The Project as a whole expanded in several ways during the second year. Table VIII illustrates the growth of the Project within area school systems.

   At the same time, a part-time staff position was also added. Funding for both years stayed at about the same level, but local financial support increased substantially as federal funding decreased.

	Year I	Year II
Federal Funds	96,304	80,300
Local Funds	3,000	20,000

Table VIII

School Systems Affiliated With the Project

Year I (1971-72)	Year II (1972-73)
Hamilton-Wenham Regional High School	Hamilton-Wenham Regional High School
	Pingree School
	Newburyport High School
	Andover High School
	Lynnfield High School
	Lewenberg Junior High
	Danvers Junior High

2. In the spring of 1973, the Project elected to undergo a national validation process in which a team of educational specialists spent 3 days in an on-site evaluation looking at every aspect of the Project. Using a 42-item instrument, they rated the Project in the top percentile.

   Thus, in April the Project went to Washington, D. C., to participate in Ed Fair '73.

3. Project Adventure also began a series of teacher training workshops in group process and curriculum design and physical education.

4. Two school systems were able to teach the full-year tenth grade curriculum in physical education with almost no support from the Project staff. This was the full-year program. The biology trips for most of the tenth grade were also carried out by the school's science teachers, rather than the Project staff.

PART III

DISCUSSION

This evaluation report for the second year is an expansion of the statistical report that was done the first year. It is not, however, a complete evaluation of all the Project's activities. Reports on trips, on curriculum units and on workshops are available, but would have been too lengthy to include. The focus here is on evaluating the Project's major efforts, its growth and effect on the target school in two consecutive years.

Overall, the data shows change has moved in the desired direction. The growth of the tutoring program, the enthusiasm of parents and the report of the national validation team indicate the high quality of most of the programs. The expansion of the Project from work with a single school in the first year, to work with 7 schools and 2 social agencies, indicates the need felt locally for such a program.

Statistical analysis of physical and affective data for students in the physical education program for the 2 years shows some overall similarities and a number of differences. Changes are normally the result of many factors at work on a particular individual or group. Such things as maturation, peer relationships, curriculum, life experiences, etc.

All play a part. It is always difficult, if not impossible, to sort out which factors account for changes.

One of the major hypotheses in this study, however, is that Project Adventure would have a positive effect on the self-concept, the level of social interaction and involvement of students, their physical functioning, and the quality of life within a school. While it is difficult to "prove" that the changes indicated by the statistical data result from the Project's activities, the findings do seem clearly to indicate that overall the program has not been detrimental to the students' physical or psychological well-being. Its effect has tended to be neutral or somewhat positive. Changes in scores on the tests have not been altogether consistent for the 2 years, but change both years on any of the psychological or affective measures has either been in a positive direction or has not been statistically significant.

In the first year, for example, the class showed a greater perception of internal control, as measured on the Rotter Scale. In the second year, results on this test were not statistically significant. The third year test scores may eventually shed some light on long-range trends with each of the different measures.

This conclusion tends to be supported by the fact that the "soft data" from the volunteer program and the parents' questionnaires reinforces the quantitative material. In other words, students and parents responses tended to complement the indications of more active involvement, increased positive identity (at least for females), and higher achievement motivation.

It is not surprising to find that there was greater change among students and more response from parents in the first year. The Project was new and different, and its staff taught the courses themselves. What is more important is the fact that some changes remained constant for both years.

One of the most notable changes in the data from the tenth grade class was the favorable response of the girls to such an outdoor physical education program. In both years, their scores on positive identity and achievement motivation increased significantly. Last year's evaluation speculated that this might have been due to the male gym teachers. Since the second year course was taught by the normal physical education teachers, this evidently was not the case. Even the second year scores for positive identity

indicated increased activity and willingness to take risks increased. Scores on physical meausres for girls were mixed. Programs such as this seem to have a direct influence on the girls' self-perceptions. Perhaps the unusual demands placed upon sophomore girls contributed to a growth in personal worth.

While the findings on the hard data are significant, and the positive comments from parents, students and the community are impressive, it is nevertheless difficult to assess the exact contribution of the Project to the school as a whole. Data from the third year now being gathered may be extremely useful in this regard.

It will be possible to compare scores from the gym classes taught by non-Project staff. Second, most aspects of the Project will be a standard part of the high school curriculum. Their effect will not come simply because they are brand new. Stable changes may thus become evident in the 3 sophomore classes. Long-range data on the first class will also be available and the measures of change will also be sharper and more closely related to the Project's goal.